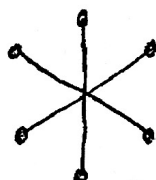


Worksheet 8.1

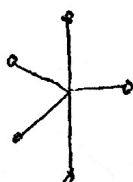
In groups of three, blow up six balloons that serve as models for electron pairs. Tie them together and see what shape they assume. Draw a stick model of the shape. Next, use the needle and pop one balloon. Determine the shape and draw the stick model. Continue down to two balloons.

1) Six balloons:



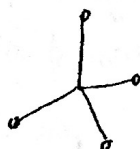
Octahedral

2) Five balloons:



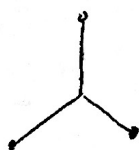
Trigonal Bipyramidal

3) Four balloons:



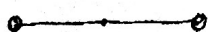
Tetrahedral

4) Three balloons:



Trigonal Planar

5) Two balloons:



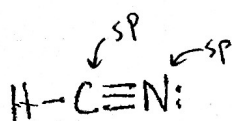
Linear

Worksheet 8.3a – HCN, COCl₂, PCl₄F

For the molecules listed below:

- 1) draw the Lewis structure,
- 2) determine the shape, and
- 3) indicate if they have a dipole moment.

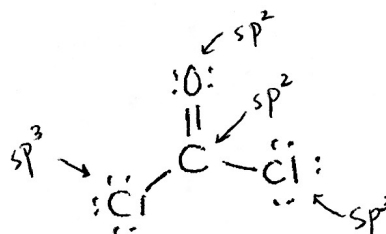
HCN, COCl₂, PCl₄F



EG: Linear

MG: Linear

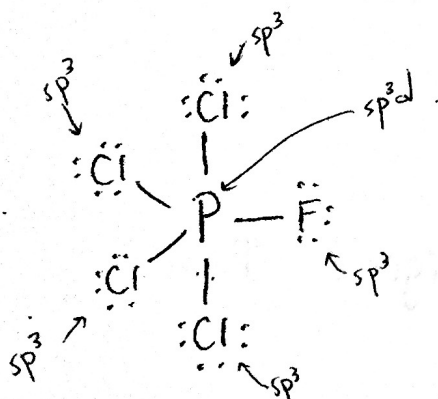
Has a dipole moment



EG: trigonal planar

MG: trigonal planar

Has a dipole moment



EG: trigonal bipyramidal

MG: trigonal bipyramidal

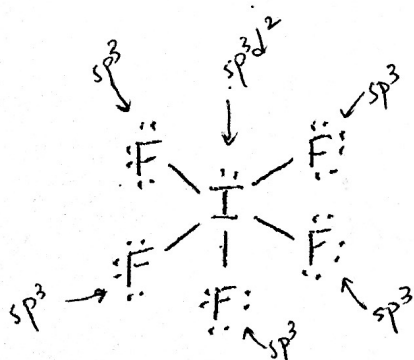
Has dipole moment

Worksheet 8.3b – IF₅, CCl₄, NF₃

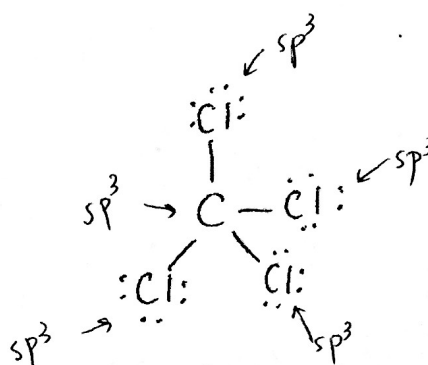
For the molecules listed below:

- 1) draw the Lewis structure,
- 2) determine the shape, and
- 3) indicate if they have a dipole moment:

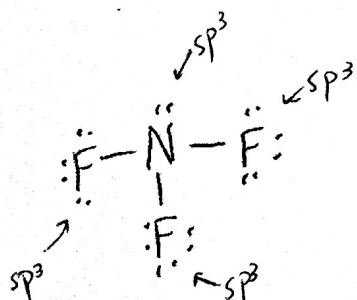
IF₅, CCl₄, NF₃



EG: Octahedral
MG: Square pyramidal
Has dipole moment



EG: Tetrahedral
MG: Tetrahedral
Does not have dipole moment



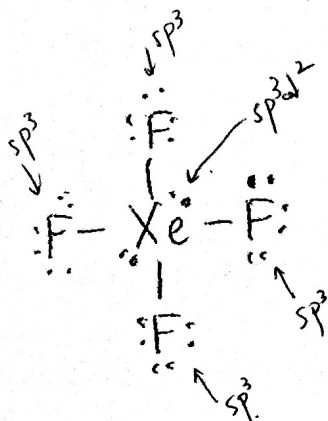
EG: tetrahedral
MG: trigonal pyramidal
Has dipole moment.

Worksheet 8.3c – XeF_4 , CF_2Cl_2 , SF_6

For the molecules listed below:

- 1) draw the Lewis structure,
- 2) determine the shape, and
- 3) indicate if they have a dipole moment.

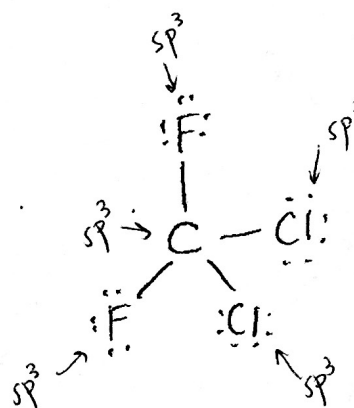
XeF_4 , CF_2Cl_2 , SF_6



EG: Octahedral

MG: Square planar

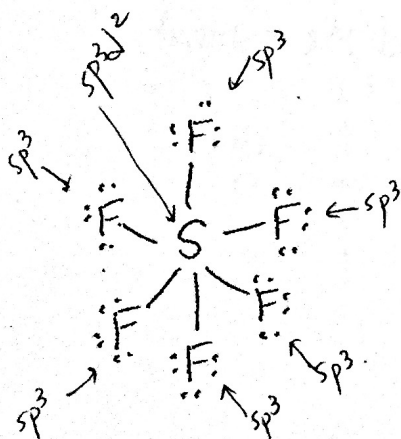
Does not have dipole moment



EG: Tetrahedral

MG: Tetrahedral

Has dipole moment



EG: Octahedral

MG: Octahedral

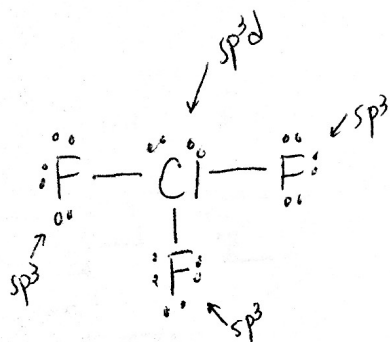
Does not have dipole moment

Worksheet 8.3d - ClF_3 , GeH_4 , CS_2

For the molecules listed below:

- draw the Lewis structure,
- determine the shape, and
- indicate if they have a dipole moment.

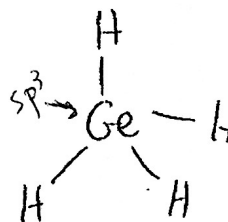
ClF_3 , GeH_4 , CS_2



EG: Trigonal Bipyramidal

MG: T-shaped

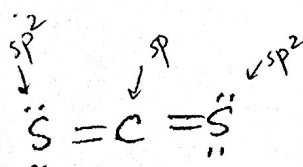
Has dipole moment



EG: Tetrahedral

MG: Tetrahedral

Does not have dipole moment



EG: Linear

MG: Linear

Does not have dipole moment